



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: C07K 14/47, 14/575, A61K 38/17, 38/22	A3	(11) International Publication Number: WO 96/34665 (43) International Publication Date: 7 November 1996 (07.11.96)
(21) International Application Number: PCT/GB96/01094 (22) International Filing Date: 7 May 1996 (07.05.96) (30) Priority Data: 9509164.1 5 May 1995 (05.05.95) GB (71) Applicant (for all designated States except US): SMITHKLINE BEECHAM PLC [GB/GB]; New Horizons Court, Brentford, Middlesex TW8 9EP (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): SMITH, Richard, Anthony, Godwin [GB/GB]; SmithKline Beecham Pharmaceuticals, Coldharbour Road, The Pinnacles, Harlow, Essex CM19 5AD (GB). BEELEY, Lee, James [GB/GB]; SmithKline Beecham Pharmaceuticals, Great Burgh, Yew Tree Bottom Road, Epsom, Surrey KT18 5XQ (GB). (74) Agent: RUTTER, Keith; SmithKline Beecham, Corporate Intellectual Property, SB House, Great West Road, Brentford, Middlesex TW8 9BD (GB).		(81) Designated States: JP, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 9 May 1997 (09.05.97)
(54) Title: BIOLOGICALLY ACTIVE PEPTIDE FRAGMENTS OF OB PROTEIN (57) Abstract <p>The present invention provides a protein fragment of the <i>ob</i> protein, being an active site of said protein. The active site is suitably provided by the <i>ob</i> protein when it is in the form of a four helix bundle structure, particularly that having an up-up down-down topology. In particular, the active site is formed from one or more amino acids selected from one or more of the four helices forming the secondary structure of the <i>ob</i> protein, especially a protein fragment consisting of amino acid residues 26 to 39, 74 to 88, 93 to 113 or 142 to 161. The compounds of the invention are considered to be capable of regulating the physiological activity of the <i>ob</i> protein and are therefor of potential use in the treatment of nutritional and metabolic disorders, particularly obesity and diabetes in the case of agonists and anorexia and cachexia in the case of antagonists.</p>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgyzstan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	KZ	Kazakhstan	SG	Singapore
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovakia
CM	Cameroon	LR	Liberia	SN	Senegal
CN	China	LT	Lithuania	SZ	Swaziland
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	LV	Latvia	TG	Togo
DE	Germany	MC	Monaco	TJ	Tajikistan
DK	Denmark	MD	Republic of Moldova	TT	Trinidad and Tobago
EE	Estonia	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	UG	Uganda
FI	Finland	MN	Mongolia	US	United States of America
FR	France	MR	Mauritania	UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

INTERNATIONAL SEARCH REPORT

Inter national Application No
PC1/GB 96/01094

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C07K14/47 C07K14/575 A61K38/17 A61K38/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07K A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 96 23815 A (LILLY CO ELI ; HEATH WILLIAM F JR (US); MANETTA JOSEPH V (US); SHIE) 8 August 1996 see SeqID no's. 2, 5 see claims; examples ---	1-4
E	WO 96 23514 A (LILLY CO ELI ; BASINSKI MARGRET B (US); DIMARCHI RICHARD D (US); FL) 8 August 1996 see claims; examples ---	1-4, 8-10
P, X	WO 96 05309 A (UNIV ROCKEFELLER ; FRIEDMAN JEFFREY M (US); ZHANG YIYING (US); PROE) 22 February 1996 see page 36, line 18 - page 40, line 10; claims; examples --- -/--	1-4, 8-10

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

24 March 1997

Date of mailing of the international search report

07.04.97

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+ 31-70) 340-3016

Authorized officer

Fuhr, C

INTERNATIONAL SEARCH REPORT

International Application No

PC1/GB 96/01094

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>NATURE, vol. 372, no. 6505, 1 December 1994, pages 425-432, XP000602062 YIYING ZHANG ET AL: "POSITIONAL CLONING OF THE MOUSE OBESE GENE AND ITS HUMAN HOMOLOGUE" see figures 4,6 -----</p>	1-10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 96/01094

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9623815 A	08-08-96	AU 4766596 A	21-08-96

WO 9623514 A	08-08-96	US 5525705 A	11-06-96
		US 5567678 A	22-10-96
		US 5580954 A	03-12-96
		US 5563244 A	08-10-96
		US 5532336 A	02-07-96
		US 5552522 A	03-09-96
		US 5563245 A	08-10-96
		US 5569743 A	29-10-96
		US 5521283 A	28-05-96
		US 5574133 A	12-11-96
		US 5563243 A	08-10-96
		US 5569744 A	29-10-96
		US 5594104 A	14-01-97
		US 5567803 A	22-10-96
		AU 4766096 A	21-08-96
		AU 4765996 A	21-08-96

WO 9605309 A	22-02-96	AU 3329895 A	07-03-96
		DE 19531931 A	07-03-96
		GB 2292382 A	21-02-96
		ZA 9506868 A	09-04-96
